

NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



THESIS

**EXAMINATION OF THE BENEFITS AND
MEASURES OF THE MENTOR-PROTEGE
PROGRAM: A CASE STUDY**

by

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December, 1994

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A CASE STUDY

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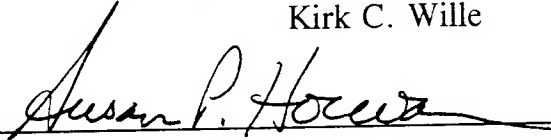
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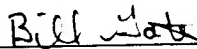


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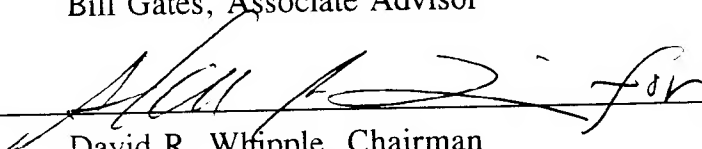
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ABSTRACT

The Pilot Mentor-Protege Program was implemented with the passage of P.L. 101-510 in November, 1990. The purpose of the program is to provide incentives to DoD prime contractors to assist in the development of Small and Disadvantaged Business concerns (SDBs) and foster the development of long term business relationships. Recent evaluation of the program has been both narrow and superficial. This case study was undertaken to identify the benefits of the program and elaborate current measures to address an expanded definition of benefits.

The results of this study indicate that there are many benefits of the Mentor-Protege Program that should be considered during program evaluation. Current evaluation criteria may be modified to address additional program results. There are also essential interaction processes that may indicate a successful mentor-protege relationship. Process measures may give managers the ability to identify strengths and potential weaknesses, providing a blueprint for building an effective mentor-protege relationship.

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I. INTRODUCTION

A. BACKGROUND

The National Defense Authorization Act for Fiscal Year 1991 Established a Pilot Mentor-Protege Program (PMPP). This Program is designed to provide incentives for prime contractors to increase Small Disadvantaged Business (SDB) participation in DOD subcontracting. The program's objective is to increase the capabilities of SDBs to participate as subcontractors and suppliers in DoD contracts, other Government contracts and commercial contracts. Additionally, the program should establish long term business relationships between SDBs and prime contractors. Under the program, large defense contractors (mentors) enter into formal agreements with small disadvantaged businesses (proteges). The mentor provides developmental assistance to the protege in technical and/or administrative areas. In return, the mentor may receive either cash reimbursement or credit towards subcontracting goals from the Government. The initial review period for the Program was two years beginning with FY-92 and concluding in FY-93.

B. OBJECTIVES OF THE RESEARCH

The objectives of this research were to use a case study of a specific mentor-protege relationship to: (1) elaborate the types of management and technical assistance provided by a mentor firm to a protege; (2) determine the effect that the assistance has had on the protege's business plan and business volume; (3) discuss the benefits of the program from the perspective of several stakeholders including the mentor, the protege, the local community, and DoD/Federal Government; (4) identify possible measures of the benefits discussed; (5) review the case Mentor-Protege relationship using the criteria identified in current DOD policy, Appendix I of the Defense Federal Acquisition Regulation Supplement (DFARS); and (6) use

the theoretical model of Transorganizational Systems to examine the characteristics of the processes which underlie the mentor-protege relationship.

C. THE RESEARCH QUESTION

The following research question was used to complete the objectives of this study:

What are the benefits of the Mentor-Protege Program and how can the current measures be elaborated to address an expanded definition of benefits?

The following subsidiary questions are germane to this research effort:

1. What are the essential elements of the Mentor-Protege Program?
2. Utilizing a case study, what are the benefits of the program as identified by current DoD measures and Stakeholder Analysis?
3. Utilizing a case study and the theory of Transorganizational Systems, what interorganizational processes indicate a successful mentor-protege relationship?
4. Based on the outcome of this case, how might DOD modify its policy for evaluating the Mentor-Protege Program?

D. RESEARCH METHODOLOGY

A comprehensive examination of all prior Naval Postgraduate School research, applicable literature, statutes, regulations, published goals and objectives, reports and historical facts was conducted to lay the foundation for this thesis. The preponderance of information was included in National Appropriations Acts, DOD Regulations, DFARS, and General Accounting Office reports.

Additionally, research was conducted via interview with personnel from both Oshkosh Truck Corporation, the mentor firm, and Steeltech Manufacturing Incorporated, the protege

firm. These personnel included executives, managers, and small business representatives. The goal of the interviews was to gain both a personal and organizational perspective of the program's advantages, disadvantages, benefits, and costs. Additional information on methodology is presented in Chapter IV, Methodology.

E. DEFINITIONS AND ABBREVIATIONS

1. **PMPP-** Pilot Mentor-Protege Program.
2. **SDB-** Small Disadvantaged Business, a business concern that is at least 51% owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51% of its stock owned by one or more socially and economically disadvantaged individuals and has its management and daily business controlled by one or more such individuals. (FAR, 19.001)
3. **SBA-** Small Business Administration.
4. **USD(A&T) OSADBU-** Under Secretary of Defense for Acquisition and Technology, Office of Small and Disadvantaged Business Utilization.
5. **Emerging SDB concern-** A small disadvantaged business whose size is no greater than 50% of the numerical size standard applicable to the standard industrial code for the supplies or services which the protege firm provides or would provide to the mentor firm. (DFARS, I-101)
6. **Historically black college or university-** An institution determined by the Secretary of Education to meet the requirements of 34 CFR Section 6082. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986. (DFARS, I-101.2)
7. **Minority institution of higher education-** An institution meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in Section 316(b)(1) of such act (20 U.S.C. 1059c(b)(1)). (DFARS, I-101.3)

8. **Stakeholder**- any person, group, or organization that can place a claim on an organizations's attention, resources, or output, or is affected by its output. (Bryson, 1988, p.52)
9. **Transorganizational System**- organizations which have joined together for a common purpose. They maintain separate identities and disparate goals yet employ either formal organization or informal collaboration for joint decision making. (Cummings, 1984)

F. ORGANIZATION OF THE STUDY

This is a study of the benefits of the Mentor-Protege Program - how they are currently measured and alternative or additional determinants of program benefits. The remainder of the thesis is organized as follows.

Chapter II presents a brief history of the Mentor-Protege Program, its purpose, Congressional intent and program progress and review.

Chapter III contains a literature review of two current management theories: Transorganizational Systems (Cummings, 1984) and Stakeholder Theory (Freeman, 1984; Roberts & King, 1989).

Chapter IV contains information on research methodology, outlines specific data gathering methods and discusses the advantages and disadvantages of case methodology.

Chapter V, Results, is divided into three parts. First, the more quantitative data collected are presented in response to the current program measures outlined in Appendix I of the DFARS. Second, benefits of the program are elaborated using Stakeholder Analysis. Third, the interactive process of the case relationship are examined using the theoretical framework of Transorganizational Systems.

Chapter VI contains conclusions about the benefits of the PMPP based on this case study, recommended measures of the program's benefits and recommendations for modifying the DOD Policy for evaluating the program.

II. THE MENTOR-PROTEGE PROGRAM

A. INTRODUCTION

Recently, the United States Federal Government has been interested in providing the means for socially and economically disadvantaged individuals to compete on an equal basis in the Nation's economy. This is evident in the increasing amount of legislation aimed at achieving this goal. A complete synopsis of socio-economic procurement legislation may be found in Chapter II of Huff's (1991) thesis. The Mentor-Protege Program is the latest procurement-related Government program designed to increase the involvement of SDBs in Government procurement.

The Pilot Mentor-Protege Program was officially established in November, 1990 as an amendment to the FY 1991 Defense Authorization Act (P.L. 101-510). Section 831 contains the Mentor-Protege Program. The Mentor-Protege Program legislation differs from most of the previous SDB legislation. It is aimed at enhancing the capabilities of SDBs and therefore their ability to compete in both Government and industry markets. This is done by encouraging Government prime contractors to help develop SDBs; the program is incentive based and rewards contractors for their involvement with SDBs.

B. PURPOSE

The purpose of the Mentor-Protege program, as found in Public Law 101-510, the National Defense Authorization Act for Fiscal Year 1991, is:

...to provide incentives for major Department of Defense contractors to furnish disadvantaged small business concerns with assistance designed to enhance the capabilities of disadvantaged small business concerns to perform as subcontractors and suppliers under Department of Defense contracts and other contracts and subcontracts in order to increase the participation of such business concerns as subcontractors and suppliers under

Department of Defense contracts, other Federal Government contracts, and commercial contracts. (P.L. 101-510, 1990, p.1607)

There are three types of incentives that prime (mentor) firms may receive: direct reimbursement of developmental costs, indirect reimbursement of costs, and credit towards SDB subcontracting goals. The mentor firm must decide which of these methods is best suited for their specific situation. (DFARS, 1994)

Direct reimbursement may be received through a separate contract, cooperative agreement or other agreement with DoD or by adding a separately priced contract line item on a current DoD contract. Adding a contract line item requires that the mentor firm identify a DoD program manager willing to fund the program. Any unreimbursed costs may also be applied as credit toward SDB subcontracting goals.

Indirect reimbursement is more suitable to mentor companies performing cost reimbursement contracts for the Department of Defense. This method allows mentor firms to charge developmental assistance costs to their indirect cost expense pools or "overhead" account. These costs may also be applied toward established SDB subcontracting goals.

Costs not directly reimbursed by DoD may be applied to the mentor firm's established SDB subcontracting goal. This goal was established at 5% of DoD subcontracting dollars for defense contractors by P.L. 99-661. Mentor firms may also choose to apply for credit only. Credit may be applied in a multiplicative manner depending on the nature of the assistance provided. Guidelines for calculating credit amounts are as follows:

1. Four times the total amount of such costs attributable to assistance provided by Small Business Development Centers (SBDC), Historically Black Colleges and

Universities (HBCU), Minority Institutions (MI), and Procurement Assistance Centers (PAC).

2. Three times the total amount of such costs attributable to assistance furnished by the mentor's employees.
3. Two times the total amount of other such costs incurred by the mentor in carrying out the developmental assistance program. (DFARS, 1994, Appendix I)

Thus a mentor firm may be provided with incentives to assist in developing their protege through a number of methods:

1. Reimbursement of developmental costs through a separate contract, cooperative agreement or other agreement between DoD and the mentor firm.
2. A combination of (1) above and credit towards SDB subcontracting goals for any unreimbursed costs.
3. Reimbursement of developmental costs through a separately priced contract line item added to a current DoD contract.
4. A combination of (3) above and credit towards SDB subcontracting goals for any unreimbursed costs.
5. Charging developmental costs to an indirect expense pool or "overhead account" and receiving credit towards SDB subcontracting goals for those costs.
6. Credit only towards SDB subcontracting goals for developmental costs incurred under the program.

C. CONGRESSIONAL INTENT

The primary intent of the Mentor-Protege Program is to increase the number of subcontracts awarded to SDBs. This will be accomplished by increasing the ability and opportunity of SDBs to compete in DOD procurement. Many prime contractors were having a difficult time finding qualified SDBs in some industries and therefore could not meet their SDB

subcontracting goals. The notion was that prime contractors could increase their awards to SDBs if the Government were to provide them with incentives to build a qualified subcontracting base. By providing the incentives discussed earlier, the Government is financing an assistance program for SDBs. Allowing a prime contractor to assist its subcontractor should help develop long term business relationships between prime contractors and subcontractors and foster additional SDB involvement.

D. PROGRAM PROVISIONS

For a detailed summary of subsection requirements included in Section 831 of P.L. 101-510 the reader is referred to Chapter III of Huff's (1991) Thesis. The key provisions of this legislation are presented below. (P.L. 101-510, 1990)

Mentor firms must be eligible for Federal contract awards and they must have received at least one hundred million dollars in contracts and subcontracts during the preceding fiscal year. Additionally, the mentor firm must demonstrate the capability to assist in developing protege firms. A business concern meeting the eligibility requirements may enter into mentor agreements and furnish assistance to disadvantaged small business concerns upon submitting an application and receiving approval from the Secretary of Defense.

Protege firms are disadvantaged small business concerns, as defined by the Small Business Administration, who obtain assistance from mentor firms. SDB firms may self certify that they are, in fact, a small and disadvantaged business concern.

Prior to providing assistance to a protege firm, a mentor firm shall establish a mentor-protege agreement. This agreement shall identify the assistance to be provided by the mentor firm and should include the following:

1. A developmental program for the protege firm, in such detail as may be reasonable, including (A) factors to assess the protege firm's developmental progress under the program, and (B) the anticipated number and type of subcontracts to be awarded the protege firm.
2. A program participation term, which shall not exceed five years and may be renewed upon its expiration for an additional term not to exceed four years.
3. Procedures for the voluntary termination of the agreement by either the mentor or the protege firm and for the mentor firm to terminate for cause.

The program allows for a wide variety of assistance from the mentor firm to the protege firm. Allowable assistance as identified in the legislation is listed below.

1. Assistance, by using mentor firm personnel in:
 - A. General business management, including organizational management, financial management, and personnel management, marketing, business development and overall business planning;
 - B. Engineering and technical matters such as production, inventory control, and quality assurance; and
 - C. Any other assistance designed to develop the capabilities of the protege firm under the developmental program.
2. Award of subcontracts on a noncompetitive basis to the protege firm under the Department of Defense or other contracts.
3. Payment of progress payments for performance of the protege firm under such a subcontract not to exceed 100 percent of the costs incurred by the protege firm.
4. Advance payments under such subcontracts.
5. Loans.
6. Cash in exchange for an ownership interest in the protege firm not to exceed 10% of total ownership interest.

7. Assistance obtained by the mentor firm for the protege firm from one or more of the following:
 - A. Small business development centers.
 - B. Entities providing procurement technical assistance.
 - C. A historically Black college or university or a minority institution of higher learning.
(P.L.101-510, 1990)

Additional provisions in the legislation include the incentives for mentor firms and the reimbursement criteria which were discussed in Section B of this chapter.

E. PROGRAM PROGRESS

The pilot Mentor-Protege Program was not fully implemented on October 1, 1991 as originally intended. Initially, DoD only authorized Mentor-Protege agreements which specified "credit" towards established SDB subcontracting goals as the mentors' incentive. DoD officials did not encourage program managers to sponsor mentor-protege agreements of any type until December 5, 1991. Funding for the program was authorized and appropriated by Congress in December of 1991 but was offered up for rescission by the DoD Comptroller in January of 1992. Congress rejected the offer but DoD policy prevented reimbursement and was not amended until October 1992. Additionally, it was not until December 1992 that DoD published a notice in the Commerce Business Daily announcing its intent to issue a draft solicitation for the award of cooperative agreements. The solicitation was issued on April 12, 1993 and awards of cooperative agreements to mentors were made in August of 1993.

Because of this half-hearted commitment and poor implementation, initial participation of mentor firms was quite low. As of December 31, 1991 DoD had received only six applications and had approved only two mentor-protege

agreements. By March of 1992 the number of approved agreements was up to only eight with twelve applications in process. (GAO, 1992)

Since removing the "credit only" restriction in 1992, the program has experienced a steady increase in the number of approved agreements. By May 1993 the number of approved agreements had increased to 42, involving 29 mentor firms. In December 1993, total participation included 71 mentor-protege agreements with 44 active mentor firms. Current totals include 136 approved agreements with 72 mentor firms providing assistance to 124 proteges. (GAO, 1994)

Congress has continued to support the program through appropriations which have totaled \$120 million to date--\$30 million in fiscal year 1992 and \$45 million each in fiscal years 1993 and 1994. The National Defense Authorization Act for Fiscal Year 1994 (P.L. 103-160) extended the authority to establish agreements between mentors and proteges to September 30, 1995. (GAO, 1994)

F. PROGRAM REVIEW

Initial legislation for the Mentor-Protege Program required the General Accounting Office to conduct two program reviews during the initial two year period. The first, an Interim Report, was to be conducted by March 30, 1992. The second was an evaluation of the program implementation covering the period from 1 October, 1991 to September 30, 1993.

The Interim report published on March 30, 1992 was to address the regulatory implementation, initial participation, statutory/regulatory deficiencies and recommended corrective action. This report concluded that the program lacked an aggressive implementation strategy, resulting in low initial participation. GAO believed that DoD did not have internal controls for reviewing and approving applications or

monitoring the program. Additionally, GAO stated that existing program measures did not quantify specific program accomplishments or rates of progress and therefore could not determine program success. Finally, the allowable incentives under the program, credit towards SDB subcontracting goals and reimbursement, were considered to be limited incentives insufficient to induce significant program participation.

GAO recommended that the Secretary of Defense direct the Office of Small and Disadvantaged Business Utilization (OSADBU) to:

1. Develop and implement adequate internal controls in the application and approval process and in the oversight of protege development.
2. Work with congressional representatives to develop evaluation criteria that, to the extent feasible, quantify desired program accomplishments.
3. Compile and analyze available data on subcontract goals and the use of incentives and penalties to achieve these goals, and consider ways to enhance Mentor-Protege Program incentives for prime contractor participation. (GAO, 1992)

The final report published in February 1994 was to determine if the purposes of the pilot program were being achieved. This report concluded that the slow implementation during the specified 2-year review period prevented this determination. The report also stated that on average, each protege received about \$1.2 million of assistance during one of the cooperative agreement awards. GAO also compared the Mentor-Protege program with the SBA's 7(j) program. In this program the SBA contracts with management consultants to provide assistance to SDB firms. GAO concluded that the two programs provided similar support to SDBs and the Mentor-Protege Program costs much more. This however, is a very narrow comparison. The 7(j) program does not involve

subcontract awards nor establish a long term business relationship between a DoD prime contractor and its subcontractor. Thus a comparison based solely on costs per SDB without assessing consequent benefits may be misleading. (GAO, 1994)

DoD evaluation criteria for the Mentor-Protégé program is outlined in Appendix I of the Defense Federal Acquisition Regulation Supplement (DFARS). It sets forth eight quantitative and qualitative measures to evaluate program results. These measures are listed below.

1. An increase in the dollar value of subcontracts awarded to SDBs by mentor firms under DoD contracts.
2. An increase in the dollar value of contract and subcontract awards to protégé firms (under DoD contracts, contracts awarded by other Federal agencies and under commercial contracts) since the date of entry into the program.
3. An increase in the number and dollar value of subcontracts awarded to a protégé firm (or former protégé firm) by its mentor firm (or former mentor firm).
4. An improvement in the participation of SDBs in DoD, other Federal agencies, and commercial contracting opportunities that can be attributed to the development of SDBs as protégé firms under the program.
5. An increase in subcontracting with SDB concerns in industry categories where SDBs have not traditionally participated within the mentor firm's vendor base.
6. The involvement of emerging SDBs in the program.
7. An expanded relationship between mentor firms and protégé firms to include non-DoD programs.
8. The development of protégé firms that are competitive as subcontractors and suppliers to DoD or in other Federal agencies or commercial markets. (DFARS, 1994, Appendix I, pp. 1-2)

G. SUMMARY

Chapter II has discussed the key elements of the Mentor-Protege Program - an introduction to the program, the program's purpose, congressional intent behind the program, key program provisions, program progress, and program review.

The program's purpose is to provide incentives to prime contractors to furnish SDBs with assistance designed to improve their capability to compete for contracts and subcontracts. It is Congress' intent to advance their socioeconomic goals by increasing the number of subcontracts awarded to SDBs. The program commenced without DoD's full support and oversight, but has maintained the support of Congressional leaders. Initial participation was limited but recent growth may predict growing acceptance by DoD prime contractors.

One major goal of this summary was to highlight the existing criteria for determining program benefits as outlined by policies for initiating the program; guidelines for evaluating the program; and existing evaluation findings. The following chapter will expand the determination of benefits from the perspective of multiple stakeholders. A second goal was to examine the nature of the relationship between the mentor and the protege as outlined by the legislation. This will also be elaborated in the next chapter using a theoretical model for effective interorganizational relationships.

III. LITERATURE REVIEW

A. INTRODUCTION

Two fundamental tasks are essential to achieving the objectives of this research, as outlined in Chapter I. First, examine the management and technical assistance provided by the mentor firm to the protege. Second, discuss the benefits of the Mentor-Protege Program from three perspectives: the Government, the mentor, and the protege. In order to accomplish these tasks, this research relies on a framework based upon two current management theories: Transorganizational Systems (Cummings, 1984) and Stakeholder Analysis (Freeman, 1984; Roberts & King, 1989). The first, Transorganizational Systems will be used to examine the inter-organizational relationship between the mentor and the protege. Stakeholder analysis will be used to identify the many potential stakeholders in the Mentor-Protege Program in order to broaden the discussion of the benefits that the program may provide.

B. TRANSORGANIZATIONAL SYSTEMS

The theoretical model of Transorganizational Systems (TS) was developed by Thomas Cummings (1984). The discussion below is derived primarily from this work. TSs are comprised of organizations that have joined together for a common purpose. They have a number of distinct characteristics which separate them from other forms of organizational collectives such as networks, mergers, etc. TS's member organizations maintain their separate identities and disparate goals yet employ either formal organization or informal collaboration for joint decision making. Cumming's (1984) Integrative Framework for understanding TSs is depicted in Figure 1.

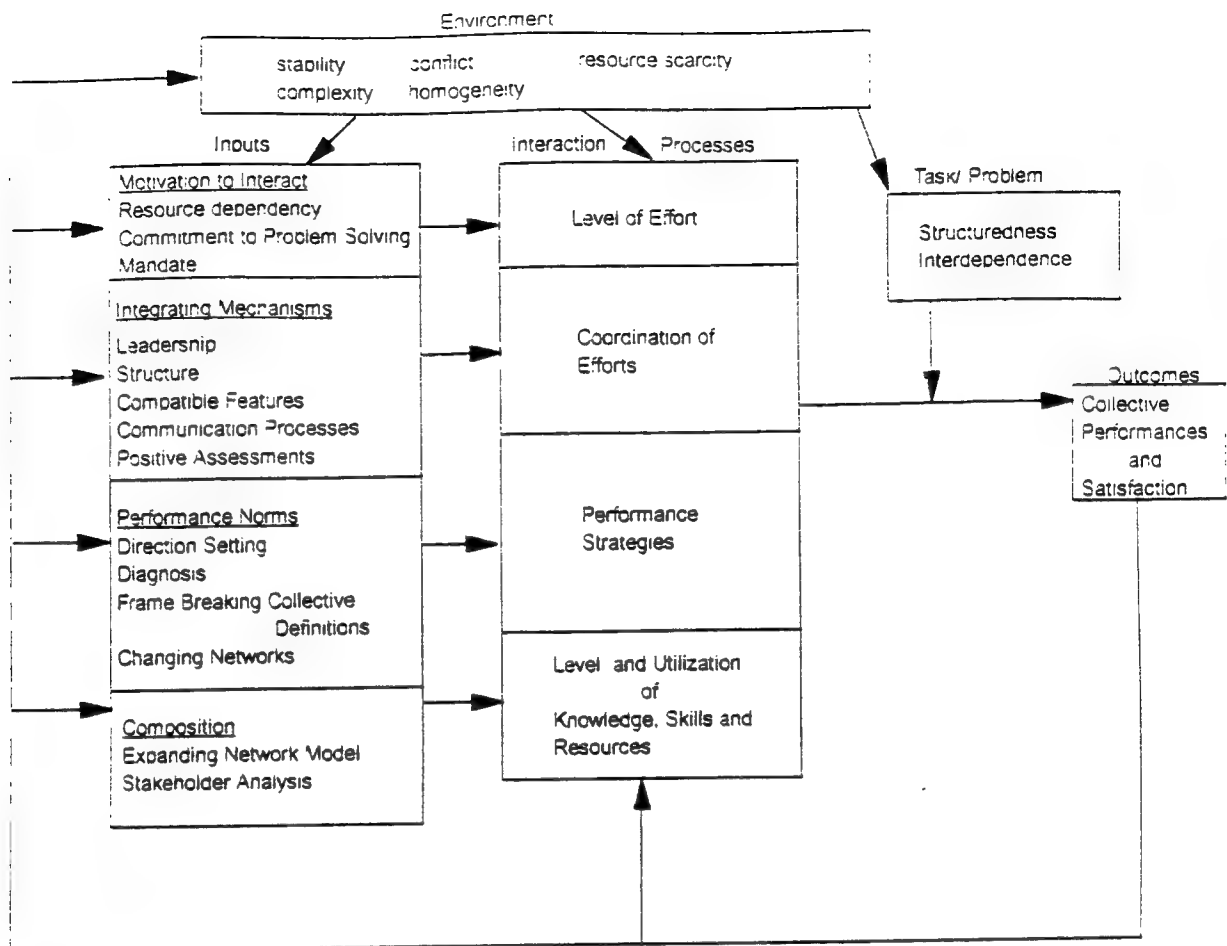


Figure 1. Integrative Framework (Cummings, 1984, p.397)

There are four key interaction processes which have a significant impact on the inter-organizational relationship between TS member organizations.

1. The level of effort member organizations expend on interacting with each other.
2. The coordination of these efforts.
3. The performance strategies used by member organizations in carrying out the shared task\problem.
4. The level and utilization of the organizations' knowledge, skills and resources applied to the task.(Cummings, 1984)

1. Level of Effort

The level of effort or motivation to interact is often measured by the frequency and/or the intensity of interaction. The level of effort displayed by member organizations may be influenced by three key factors; resource dependency, commitment to problem solving and mandate. These factors are discussed below.

a. Resource Dependency

The dominant perspective on interorganizational relations is the resource dependence exchange model. It suggests that organizations cannot internally generate all needed resources and must relate with elements in the environment, such as other organizations, in order to obtain those resources. Normally these resources are in short supply due to competition. When two or more organizations perceive a mutual benefit from interacting they may enter symmetrical exchanges where both organizations are motivated to interact.

b. Commitment to Problem Solving

A second motivational force for TS is each organization's commitment to jointly solving problems that are too extensive and multi-faceted for a single organization to resolve on their own. Case research has linked commitment to problem solving to the intensity of interaction and has indicated that the greater the frequency of communication among TS member organizations, the greater the awareness of and commitment to joint problem solving. Joint problem solving is largely dependent on each organization's perception of a common problem and their recognition of a need to solve it jointly.

c. Mandate

The third motivational factor for participating in TSs is when mandated by some higher authority, law or regulation. Mandated relationships are generally governed by rules and may represent a form of social planning where

services are controlled through central planning and avoidance of domain overlap. Mandated relationships tend to be more intense than other types of exchanges. However, this frequency and intensity of interaction may not result in a more organized or higher quality interaction process. Frequency and quality are not necessarily related.

2. Coordination of Efforts

The second interaction process affecting TS outcomes is coordinating the member organization's efforts to resolve a shared problem or task. There are five key variables relating to the coordination between and among TS member organizations: leadership, structure, compatible features, communication processes and positive assessments.

a. Leadership

TS leadership normally takes the form of a "link-pin" organization which can emerge from among the existing members or can be newly created. A link-pin organization is essential to the system because of a number of vital roles which are critical to the success of the interorganizational relationship. The core of the leadership role is to coordinate the efforts of the member organizations. Additionally, the leadership must provide standards of behavior for member organizations and promote areas of common interest. Finally, the leader or link-pin organization coordinates with and provides access to key contacts, investors, financial institutions, etc.

b. Structure

Often member organizations implement structural arrangements to coordinate their efforts. As the intensity of interaction increases, informal communication becomes inefficient and organizations may attempt to formalize exchanges through rules, policies and standard procedures. If the TS relationship involves substantial resources,

organizations are likely to seek formal agreements and established procedures.

c. Compatible Features

Coordination between member organizations can be facilitated as their features, needs and values become compatible. In most TSs there is a positive relationship between compatible operating philosophies and coordinated effort. However, this is not necessarily the case for organizations participating in a TS relationship by mandate. Coordination in these types of relationships may rely solely on the mandate. In general, the greater the shared values, needs and goals, the greater the coordination between member firms.

d. Communication Processes

Communication among member organizations is vital to coordination. Both quality and type of communication affect the relationship. Types include person-to-person, group meetings, and written reports. Relevant research suggests that person-to-person communication has the most significant impact on coordination in voluntary arrangements; quality of communication tends to influence coordination the most in mandated arrangements. Communication is important for coordinating efforts, but the type of communication necessary varies depending on the structure of the arrangement. Typically, the more formal the type of TS, the more formal the type of communication.

e. Positive Assessments

The final variable impacting TS coordination is the assessment that member organizations make of each other's performance and competence. Relevant research indicates that positive assessments are strong predictors of coordination while negative evaluations can intensify if underlying conflicts among the member organizations are not resolved.

3. Performance Strategies

The third interaction process affecting the TS outcomes is the performance strategies that member organizations use to perform tasks or solve problems. Such strategies include the choices that member organizations make about desirable outcomes and how to go about achieving them. Member organizations who share the same strategies will implement those existing strategies where applicable. When existing strategies are not shared or applicable, member organizations will develop new performance norms. There are four main methods for developing or changing performance norms: direction setting, diagnosis, frame breaking collective definitions, and changing networks.

a. Direction Setting

Direction setting is the task of establishing valued results and clarifying shared directions for action. This requires the stakeholders to reach a consensus on ends which reflect directions for actions. Then, member organizations must devise specific action plans or performance strategies that are seen as accurate and feasible operationalizations of the desired direction for action. Direction setting interventions work best if implemented at all levels: top management, planning, and operational.

b. Diagnosis

Diagnosis refers to systematically collecting and disseminating data about a system to learn about it and possibly change it. Typically, diagnosis is performed by someone outside the organization. It is normally conducted in three phases: entry, data collection and feedback. Diagnosis is often employed by member organizations to identify existing performance norms and reformulate them if necessary.

c. Frame Breaking of Collective Definitions

TS performance norms can be highly influenced by the social construction of member organizations and their collective definitions about what ends are desirable and how they should be achieved. In order for member organization to share and enforce performance norms, they may be required to change these old collective definitions. Creating a new language, new history or exploiting some type of myth making are ways to break these old collective definitions and inspire new shared definitions which will positively affect performance strategies.

d. Changing Networks

The final method for helping TSs change or develop performance norms involves changing the network of relationships of member organizations. There are two main considerations. First, how loose or tight is the network coupled? Second, are the requisite network couplings present to allow performance norms to be shared and enforced? Networks which are too loosely coupled may prevent developing shared norms while networks which are too "tight" may have norms which are difficult to change. Dominant member organizations can manipulate network coupling by encouraging or discouraging interactions with other organizations.

4. Level and Utilization of Organizations' Knowledge, Skills and Resources

The fourth interaction process affecting TS outcomes is the level and utilization of member organizations' knowledge, skills and resources applied to the shared task or problem. This is affected mainly by the composition of the TS. A TS in which member organizations have high levels of knowledge, skills and resources is more likely to have high performances than one that does not. However, once adequate task relevant knowledge, skills and resources are acquired, utilization must still be managed and coordinated. There are two approaches

for affecting the level of these critical ingredients in TSs: the expanding network model and stakeholder analysis.

a. Expanding Network Model

In the Expanding Network Model, a TS begins with a small core group of organizations and expands membership as additional stakeholders and resource groups are identified and recruited. Implementing this model may depend on gaining the support of experts and leaders in problem relevant fields and assuring that they have the requisite skills and influence to act as link-pins relating available resource information.

b. Stakeholder Analysis

This process involves identifying and selectively recruiting organizations and groups that are affected by the problem domain and have a stake in its solution. Several methods for identifying stakeholders are discussed in the next section of this chapter. However, all methods involve judgments about resources, problem interests and political assessments. Failure to identify or include a powerful stakeholder can weaken the TS capabilities.

5. Environment, Task/Problem and Feedback

The model relationships depicted in Figure 1 propose that the TS environment impacts inputs, interaction processes and task/problem characteristics. The task/problem impacts the extent to which the interaction processes influence the TS outcomes. Finally, feedback about TS outcomes affects subsequent inputs, interaction processes and environment. The effects of these three variables - environment, task/problem and feedback are discussed below.

a. Environment

TSs are embedded in environments which influence the system directly through resource and information transactions and indirectly through complex relations. TS organizations may have a competitive advantage and may be favored or selected when the future environment is uncertain, when the

demands of these environments may differ, and when the expected duration of the changed states is long. Scarcity or abundance of resources can impact member organizations' motivation to interact. Their perception of the certainty, complexity and conflict associated with the shared goals or preferred resource allocation will impact the structure of the shared problem/task.

b. Task/Problem

The nature of the task/problem can affect the extent to which the interaction processes are important for effective TS performance. The degree to which the task/problem is structured affects which interaction processes are critical for successful performance. When the task/problem is relatively structured, successful performance is more likely to depend on the level of coordination rather than innovative performance strategies or high levels of skill or knowledge. The degree of task/problem interdependence will also affect the kinds of interaction processes needed for successful performance. When TS task interdependence is low, performance is likely to depend on the level of effort member organizations expend on each task. However, when task interdependence is high, coordination of efforts becomes important to successful performance.

c. Feedback

The integrative framework in Figure 1 proposes that the TS outcomes feed back to affect subsequent inputs, interaction processes and environments. Interorganizational performances and experiences with joint programs can impact subsequent interactions. Positive evaluations relate strongly to interorganizational coordination, suggesting that members' perceptions of success are likely to encourage further coordination and efforts. While TS success seems to lead to positive inputs and processes, failure may lead either to

reduced inputs or escalating commitments to unsuccessful TS strategies as managers try to "save the ship."

C. STAKEHOLDER ANALYSIS

A discussion of the benefits of the Mentor-Protege Program can only begin with identifying the recipients of those benefits, the stakeholders of the program. Stakeholder Analysis is normally applied in the corporate setting to assist managers in setting the corporate direction. A stakeholder is defined as any person, group, or organization that can place a claim on an organization's attention, resources, or output, or is affected by its output. Examples of a Government's stakeholders are citizens, taxpayers, service recipients, the governing body, employees, unions, interest groups, political parties, the financial community, and other governments. (Bryson, 1988, p. 52) Ed Freeman (1984) defines a stakeholder as "any group or individual who can affect or is affected by the achievement of an organization's purpose."

Examining the stakeholders of the Mentor-Protege Program should help identify several key benefits of the program which must be considered in any cost-benefit discussion. "Attention to stakeholder concerns is crucial because the key to success in public and nonprofit organizations is the satisfaction of key stakeholders" (Bryson, 1988, p.99). Thus, stakeholder management as applied to the Government should focus on the Government's need to take into account its relationship (or the relationship of a Government Program) with specific stakeholder groups as it sets Government/program direction and formulates its strategies. There are four basic steps in stakeholder management which can be applied to a Government program:

1. Identifying stakeholders.

2. Determining the stakes for each stakeholder.
3. Assessing how well the organization is meeting the needs of its stakeholders.
4. Readjusting corporate priorities to bring the firm in line with stakeholder interests.

1. Identifying Stakeholders

Identifying stakeholders, groups and individuals who can affect and be affected by the organization's purpose, can easily be applied to Government policies or programs. However, while stakeholders are easily defined, this task may be more complex than anticipated. Stakeholders include both internal groups and individuals, such as employees, and external interests, such as financial institutions and Congress. Stakeholders also include groups or individuals who might be hostile to the organization (Roberts & King, 1989). Stakeholders may have a large stake in the outcome or only a small stake in the outcome. Identifying stakeholders usually begins with constructing a "stakeholder map." The map shows all these groups and individuals. This map may include a few broad categories of stakeholders or many more narrowly defined categories. It may be a single tier or may show decreasing levels of interest or "stake" in the organization. Drawing these stakeholder maps can aid in identifying additional stakeholders.

2. Determining the Stakes for each Stakeholder

The stake is something one might lose or gain in a given situation. The nature of the stake depends largely on the issue at hand. Stakes may be tangible such as money, material resources, or financial interest, or intangible, such as time, prestige, or self esteem. Additionally, a stake may be based on either self-interest or on the collective good and may be economic, political, social, or psychological in nature. (Roberts & King, 1989)

3. Assessing How Well the Firm is Currently Meeting the Needs of Its Stakeholders

For the firm, this assessment requires some analysis of how well the firm is meeting the needs of the different identified stakeholders. Then, the firm must identify any changes which might help ensure that the relationships with stakeholders are compatible with the firm's overall mission and direction. For a Government program, this assessment should include some analysis of how the program affects the stakeholders in the program, both positively and negatively. Further analysis should discuss the value of these effects, given the purpose and intent of the program. Finally, the Government must identify any changes which might be needed to ensure that the relationships with stakeholders are compatible with the program's purpose and intent.

4. Readjustment of Corporate Priorities to bring the Firm in line with Stakeholder Interests

This last step in the stakeholder management process is also the most difficult. There may be many conflicting and competing claims among the various stakeholders. This last step develops an integrated and comprehensive strategy which reconciles as many of the competing stakeholder needs with corporate priorities as possible, or at least prepares the organization to deal with those that cannot be integrated and reconciled. Creating such compatibility between corporate priorities and stakeholder interests should produce a good "fit" between the organization and its external environment. This fit should increase the firm's profitability and chance of survival (Roberts & King, 1989). For Government programs, the goal should be to develop a program which reconciles as many as possible of the stakeholders' needs with the program's purpose and intent. It should be noted that the stakeholder needs must be in keeping with the program's purpose and intent to be considered in this reconciliation. Government programs, by their nature, are developed to satisfy a purpose. However,

the effects of such programs on the many stakeholders should be considered in evaluating and modifying the program.

D. SUMMARY

Chapter III presented an integrated framework for understanding Transorganizational Systems and an overview of the stakeholder management process. Figure 1 shows that TS outcomes are immediately affected by four interaction process variables. The model suggests that certain inputs affect these interaction processes and certain input factors are critical. The framework also suggests that several features of the larger environment impact inputs, interaction processes and tasks/problems and that the task problem contingencies affect which interaction processes are salient. Finally, the framework suggests that TS outcomes feed back to affect subsequent inputs, interaction processes, and environment. This framework will be used to develop research questions aimed at examining the characteristics of the interaction processes which underlie the case mentor-protege relationship. Identification of essential or key processes may be useful in the future evaluation of both individual mentor-protege relationships and the program.

Stakeholders are any group or individual who can affect or is affected by an organization's or program's purpose. Stakeholder management is comprised of four steps to identify stakeholders, determine their stake, assess the relationship between the organization and the stakeholders, and make adjustments to reconcile organizational priorities with stakeholder needs. Stakeholder management should be considered in evaluating Government programs. The key to success in public and nonprofit organizations is satisfying key stakeholders.

Stakeholder Analysis will be used to construct a stakeholder "map" for the case relationship. Stakeholder

Analysis will help identify benefits from the perspective of multiple stakeholders therefore elaborating the benefits currently being measured. In addition, the Transorganizational Systems model will be used to examine the impact of various factors on the outcomes of the case being analyzed in this study. Together, these will provide a mechanism for evaluating both the processes which contribute to and the outcomes that result from this mentor-protege relationship.

IV. METHODOLOGY

A. INITIAL RESEARCH

Initial research for this thesis began in November, 1993 with an examination of current research and reviews of the Mentor-Protege Program. This examination included all prior Naval Postgraduate School research, applicable literature, statutes, regulations, published goals and objectives, and reports. This research identified several areas for further study. Evaluating the program's success was one area which required further elaboration. Interviews were conducted with several defense contractors and subcontractors who were participating in the program. These conversations revealed benefits of the program which had not been identified during program reviews. These benefits related to both the mentor and the protege, as well as other stakeholders in the program. A case study research strategy was chosen to discuss the program's benefits and the interaction between the two organizations in more detail.

B. LITERATURE REVIEW

After choosing the case study strategy, several management theories were reviewed for their relevance to the case at hand. Two theories, Transorganizational Systems (Cummings, 1984), and Stakeholder Analysis (Freeman, 1984; Roberts and King, 1988) were chosen to provide a framework for examining the mentor protege relationship and program benefits.

C. THE MENTOR

Oshkosh Truck Corporation is a Government prime contractor who for over seven decades has designed and produced a wide variety of specialized vehicles to serve diverse military and commercial applications. Oshkosh's total dollar amount of DoD contracts was \$334,153,758 for FY-1989

and \$253,104,549 for FY-1990. Oshkosh was awarded a contract by the U.S. Army Tank and Automotive Command (TACOM) for its Palletized Load System in 1990. This contract was valued at over \$860 million over five years. Under the contract with TACOM, Oshkosh agreed to use a SDB to supply the Flatrack (a 8x10 removable truck bed) by the third program year. Oshkosh has a history of supporting SDBs. Oshkosh assists many SDBs in qualifying for Government contracts and subsequently awards contracts to them. Steeltech is Oshkosh's only protege as specified by the guidelines of the Mentor-Protege Program.

D. THE PROTEGE

Steeltech Manufacturing Incorporated was the vision of Mr. Fred Lubber, chairman of Super Steel Products Co. Lubber was the driving force creating a SDB capable of meeting Oshkosh's needs in the Milwaukee area. Steeltech was created to provide employment opportunities for central city residents and to support the economic revitalization of the Milwaukee, WI central city area. Steeltech was established in May, 1990 to fulfill these missions. It occupies a brand new 200,000 square foot facility complete with material handling equipment, welding and metal finishing capabilities. Steeltech employs over 150 workers. Located in the heart of Milwaukee's central city, 95% of the employees are from this area. About 81% of the employees are minority, including 50% of top management and 50% of the professional positions. Since receiving the PLS subcontract, Steeltech has completed over 6,500 A-frame palletized flatracks. Additionally, Steeltech has established itself in other business areas such as modular buildings and racking equipment.

E. DATA COLLECTION

The interview technique provides the best potential for obtaining the required data. Using techniques described by Yin (1994), a set of questions was developed for both the

mentor and the protege. These questions are listed in the Appendix. Each set consists of two parts. The first part is qualitative questions asked of specific interviewees. These questions are derived according to the appropriate management theory. They are intended to examine the nature of the mentor-protege relationship and identify potential stakeholders. They attempt to measure the impact of the case relationship on both the mentor and the protege. The questions are designed to ascertain:

1. The nature of the relationship including: why the two organizations entered the program, what decisions were made, and the rationale behind those decisions.
2. The benefits of the program from the perspective of the Government, the mentor, and the protege.
3. The other stakeholders in the program, including their interest.

The second part is primarily quantitative questions involving each organization. These questions were derived primarily from the evaluation criteria outlined in Appendix I of the Defense Federal Acquisition Regulation Supplement.

Prior to conducting the interviews, an interview protocol was sent to the organizations. The protocol included an introductory statement and the questions listed in the Appendix. The Appendix was the foundation for the interviews. The interview protocol included latitude for the interviewer to pursue emergent topics as identified by the interviewee.

Interviews were conducted beginning with Oshkosh's senior management. Ten interviews were conducted with Oshkosh's management employees. Each interview was conducted on a one-to-one basis. Included were representatives from: top management, defense engineering, controller, corporate compliance, contract administration, small business, and

manufacturing. Interviews were scheduled one half hour in length but lasted about forty five minutes.

The first interview uncovered the background of the case relationship; the key facts being that Steeltech was a start-up SDB with the socio-economic goal to provide jobs and flatracks for Oshkosh's PLS Program. Additionally, Oshkosh began mentoring this SDB prior to entering the Mentor-Protege Program. This discovery rendered many of the interview questions obsolete but opened new areas for discussion. The interviews continued with each manager adding more insight into the scope and nature of the relationship. Interviewees were asked to identify key stakeholders in the program.

Following the interviews with the mentor, interviews were conducted with protege's management. Due to the nature of small business, much of the requisite organizational knowledge is found in only a few top management personnel. Due to this and other constraints, interviews with the protege were limited to the President, the Director of Programs and Sales, and the Production Manager. With the background discussed previously, this limitation had little affect on the value of the interviews. Information provided by the mentor was verified and new perspectives were provided by Steeltech's management.

F. DATA ANALYSIS

The interviews were analyzed using the measures outlined in Appendix I of the DFARS and the management theories discussed earlier. Quantitative case results were applied to the measures outlined in the DFARS. Stakeholder analysis was conducted using stakeholders identified during the interviews. Stories and descriptions outlined during the interviews were used to evaluate the basis of the relationship using Transorganizational Systems theory.

The three cornerstones: DFARS measures, Stakeholder

Analysis, and Transorganizational Systems, were used to provide a framework for evaluating the case mentor-protege relationship. This framework proposes to evaluate the program from three perspectives: using the current measures of success established by the DFARS; using an expanded definition of benefits as derived from multiple stakeholder perspectives; using a transorganizational systems perspective to illustrate the various characteristics of the mentor-protege relationship that can influence the program's success.

The first step in the analysis was to reread the results of the interviews. Data were then separated into one of the three areas for discussion. Some information was useful for discussion in more than one area. Results of the interviews were applied to the framework along with analysis relevant to each section or subsection. When data exceeded the framework, the framework was modified.

G. STRENGTHS AND LIMITATIONS OF CASE METHODOLOGY

One rationale for using a single case study design is to explore a case which presents an extreme or unique example. The mentor-protege relationship between Oshkosh and Steeltech is both. This case potentially can redefine program benefits and measures. Examining a single case allows the researcher to conduct a more comprehensive evaluation. Detailed discussion of one case may provide information that can be applied on a larger scale. This information may not be accessible with more cursory research. (Yin, 1994)

A potential vulnerability of the single-case design is that a case may later turn out different than expected or be irrelevant for larger application. Single case designs therefore require careful investigation of the potential case to minimize this risk. Case studies have also been stereotyped as having insufficient precision, objectivity, and rigor. However, this stereotype may be inaccurate. (Yin, 1994)

V. RESULTS AND ANALYSIS

A. INTRODUCTION

Presentation of the case results and analysis must begin by discussing the background information. This information is key to understanding the mentor-protege relationship between Oshkosh Truck Corporation and Steeltech Manufacturing Incorporated.

Oshkosh Truck Corporation is a Government prime contractor who for over seven decades has designed and produced a wide variety of specialized vehicles to serve diverse military and commercial applications. Oshkosh's total dollar amount of DoD contracts was \$334,153,758 for FY-1989 and \$253,104,549 for FY-1990. In 1990, Oshkosh received a contract from the U.S. Army Tank and Automotive Command for its Palletized Load System. The base contract exceeded \$860 million over five years.

Oshkosh's involvement with the mentor-protege concept began in June of 1990, preceding passage of the legislation which provided for the Mentor-Protege Program. Under the contract with the U.S. Army Tank and Automotive Command (TACOM) for the Palletized Load System (PLS), Oshkosh was required to use a SDB to supply the Flatrack, a removable bed for the 10x10 straight-framed truck. Although this requirement did not take effect until the third program year, Oshkosh management immediately began to search for a SDB qualified to produce such a large and integral component of the PLS. While there were minority businesses capable of building the Flatrack, Oshkosh had difficulty finding a qualified SDB with adequate facilities and expertise for such a large contract involving complex Government requirements.

Enter Mr. Fred Luber, chairman of Super Steel Products Co., one of Oshkosh's main suppliers. Luber was both the creator and driving force behind establishing a SDB capable of

meeting Oshkosh's needs in the Milwaukee area. From its inception, Steeltech was intended to catalyze central city revitalization. It was Lubert who assembled the group of minority investors who own 51% of Steeltech. He also arranged much of the complex financing required for the monumental endeavor. Oshkosh assisted in recruiting financial backers and played a key role in the creative financing. (Curtis, 1993, p.54)

Steeltech was established in May, 1990 as a subcontractor to Oshkosh Truck Corporation on the Palletized Load System program. Steeltech occupies a brand new 200,000 square foot facility complete with material handling, welding and metal finishing capabilities. Since receiving the PLS subcontract, Steeltech has produced over 6,500 A-frame palletized flatracks in accordance with the contract requirements. Steeltech has also established itself in other business areas such as modular buildings and racking equipment.

While Fred Lubert and Super Steel were instrumental in creating Steeltech as a business entity, Oshkosh was their mentor and prime contractor. Some outsiders have suggested, without empirical support, that these arrangements were less than arms length. The Mentor-Protege Program was identified by Oshkosh management as a tool they could use to help Steeltech improve and grow with the approval of DoD and the Government.

In May 1992, nearly two years after helping create and mentor Steeltech, Oshkosh applied for the Mentor-Protege Program on a "credit only" basis, and was accepted. Oshkosh chose to become a mentor long before it chose to enter the Mentor-Protege Program. Oshkosh's involvement prior to entering the formal DoD program is evidence that the management of Oshkosh identified benefits of a mentor-protege arrangement with Steeltech. Entering the program provided

structure and strengthened the relationship, adding to the already beneficial relationship between Oshkosh and Steeltech.

The benefits of this relationship should indicate the benefits associated with any similar mentor-protege arrangement, whether DoD approved or otherwise. Further examining this mentor-protege relationship may help provide an understanding of the essential elements of a successful mentor-protege relationship. This chapter will examine the benefits of the case mentor-protege relationship from two perspectives: first, quantitatively from the measures published by DoD in Appendix I of the DFARS; second, a more qualitative approach using stakeholder analysis. Finally, the last section of this chapter will examine the case relationship from an interorganizational systems perspective using Cumming's (1984) model.

B. QUANTITATIVE BENEFITS

As outlined in Chapter II of this thesis, DoD has published several criteria for evaluating the Mentor-Protege Program. These criteria are outlined in Appendix I of the DFARS. The General Accounting Office has questioned their ability to quantify specific program accomplishments or rates of progress. Because of this weakness, GAO stated that the measures could not determine program success. Additionally, as noted below, many of the measures are broad and overlapping making them difficult to apply to individual M-P relationships. However, this research will apply the measures to this case to the fullest extent possible. This evaluation will present the merits and limitations of each measure.

1. Measure One

An increase in the dollar value of subcontracts awarded to SDBs by mentor firms under DoD contracts.

Result: Oshkosh awarded Steeltech a contract for the Palletized Load System (PLS) Flatrack valued at \$64,000,000.

In FY-91 Oshkosh reported total SDB purchases of \$5,981,110 which was about 2% of total subcontracting purchases. In FY-93 Oshkosh reported purchases from Steeltech of \$16,937,605 out of \$21,912,149 in SDB purchases. In FY-94 SDB purchases exceeded 7% of subcontracting purchases, totalling \$18,701,648. Of these, \$11,814,343 were from Steeltech. Additionally, in September 1994 Oshkosh awarded Steeltech a contract for an Enhanced Flatrack system valued at about \$60 million. From the data listed above it is evident that Oshkosh's involvement with Steeltech has increased the dollar value of awards made to SDBs. SDB awards increased from almost \$6 million in FY-91 to almost \$21 million in FY-93. The decrease in purchases to Steeltech in FY-94 was due to a learning curve arrangement between the two firms which allowed for a higher price initially followed by a reduced price.

On an individual firm basis as well as aggregated for DoD, the result of this measure may or may not be the result of participation in the Mentor-Protege Program. This measure may be improved by comparing program-related SDB awards to non-program awards. For example, the data above show the change in other SDB contracts from FY-93 to FY-94 was an increase of about 38% while awards to the protege SDB decreased about 30%.

2. Measure Two

An increase in the dollar value of contract and subcontract awards to protege firms (under DoD contracts, contracts awarded by other Federal agencies and under commercial contracts) since the date of their entry into the program.

Result: Since Steeltech is a start-up SDB company, all of their initial contracts can be attributed to their mentor firm. Steeltech was created to build the Flatrack for the PLS system being produced by Oshkosh. However, the technical capabilities that accompanied entry into this market,

specifically Electro-deposition coating and metal fabrication, have opened many other markets to Steeltech. Steeltech received two contracts valued at over \$400,000 from Federal Prison Industries to construct Remote Access Lighting. Steeltech has also entered the modular building market, constructing fast food buildings as well as modular prison cells. Finally, Steeltech is performing paint and metal finishing services for a variety of commercial customers. Since Steeltech is a start-up company and has relied on the experience and expertise of Oshkosh's management since inception, it can be argued that all of the subsequent contract awards may be attributed to the mentor-protege relationship. However, in other cases, it may be difficult to determine which are program related increases and which are not; this may distort the value and validity of this measure. Comparing contract activity of protege firms before and after mentor involvement may provide some evidence of the impact of the program, but alternative explanations are also possible (e.g., changes in market forces, changes in protege business mix, etc.).

3. Measure Three

An increase in the number and dollar value of subcontracts awarded to a protege firm (or former protege firm) by its mentor firm (or former mentor firm).

Result: Again, because Steeltech was a start-up company, any award Oshkosh has made to Steeltech can be considered an increase. Most recently, Oshkosh awarded Steeltech a contract valued at \$1.2 million to develop the Enhanced Flatrack and a contract valued at about \$60 million to produce the Enhanced Flatrack. This contract will continue through the fourth quarter of 1996. This measure appears to focus directly on the program and the individual agreement and is extremely easy to determine. However, this measure suffers from the same deficiency as the previous two. The problem is showing a

direct relationship between the program and the measure's result. Such increases could be attributed to a number of other causal factors, such as changes in business mix or market forces.

4. Measure Four

An improvement in the participation of SDBs in DoD, other Federal Agencies, and commercial contracting opportunities that can be attributed to the development of SDBs as protege firms under the program.

Result: As outlined in Measure Two above, because Steeltech is a start-up SDB, all contracting opportunities result from its mentor-protege relationship. Steeltech can and has now competed for additional DoD contracts, other Federal agency contracts, and commercial contracts. If Steeltech were not a start up company, the participation attributable to the program would be more difficult to determine. This determination requires an intricate evaluation by the protege firm.

5. Measure Five

An increase in subcontracting with SDB concerns in industry categories where SDBs have not traditionally participated within the mentor firm's vendor base.

Result: The purpose of this measure is to determine if SDB concerns have entered industries where they have not previously been involved. With its state-of-the-art Electrodeposition (E-COAT) process, Steeltech is one of the few if not the only SDB with the capability to perform this electrochemical process. Because of the enormous capital investment required to install such a process, few SDBs could afford even a small E-Coat facility. Steeltech's E-Coat facility can handle parts thirty feet long, ten feet wide, ten feet high and weighing up to six thousand pounds. Additionally, the facility is environmentally sound and was designed to pass future environmental regulations. These

features place Steeltech in an industry category not normally occupied by SDBs. Again, this capability may or may not be the result of the program. This measure should probably focus on protege SDBs whose industry participation is the direct result of the Mentor-Protege Program.

6. Measure Six

The involvement of emerging SDBs in the Program.

Result: An emerging SDB is one whose size is no greater than 50% of the numerical size standard that is applicable to the Standard Industrial Code for the supplies or services that the protege firm provides. Since Steeltech was non-existent prior to its involvement with Oshkosh, it should qualify as an emerging SDB. However, the importance of this measure is unclear. If the involvement of emerging SDBs is a goal of the program then this would be an adequate measure. However, this measure does not measure the success of the program in increasing the participation of SDBs in the economy.

7. Measure Seven

An expanded relationship between mentor firms and protege firms to include non-DoD programs.

Result: To say that the mentor protege program has expanded the relationship between Oshkosh and Steeltech would be a gross understatement. Oshkosh management is involved with Steeltech management on a daily basis. Much of Oshkosh's support to Steeltech is far beyond what any mentor contractor would offer a protege subcontractor. For example, Oshkosh purchased large quantities of steel that Steeltech required as a long lead-time item but did not have the cash flow to support. This allowed Steeltech to begin working on the contract and purchase the material from Oshkosh as required to complete the work. Oshkosh also assists Steeltech in marketing their state-of-the art E-Coat facility for both Government and commercial applications. Although the two firms have an extensive and deeply committed relationship,

Oshkosh does not have any current commercial contracts with Steeltech. This measure is constrained by the extent to which the mentor firm is involved in non-DoD products. However, it is reasonable to assume that any assistance provided to a protege firm by its mentor, in the areas of general business administration or technical areas, will positively affect the protege's ability to perform in the commercial marketplace.

8. Measure Eight

The development of protege firms that are competitive as subcontractors and suppliers to DoD or in other Federal agencies or in commercial markets.

Result: This measure is very difficult to quantify. One possible measure of competitiveness is the ability to win competitive contracts and profitably perform those contracts. What percentage of successful awards can be considered competitive is subjective. The more important issue is having enough business to remain profitable. This discussion will concentrate on that area. After inception, Steeltech endured many of the problems often associated with a start-up company. Many of these problems, including cash flow shortages and short term losses are even more critical to a highly leveraged SDB. However, to the disbelief of many, Steeltech forecasts a profit for the 1st quarter of 1995. No doubt, the subcontracts it receives from Oshkosh play a key part in this profitability. However, the key to Steeltech's profitability lies in utilizing its E-Coat process on a regular basis. This utilization is critical because a preponderance of Steeltech's overhead is attributed to the expensive process equipment. Commercial E-Coat contracts are therefore the key to its profits. Steeltech is successfully marketing its E-Coat and metal fabrication capabilities to the commercial market.

C. QUALITATIVE BENEFITS (STAKEHOLDER ANALYSIS)

As defined in Chapter III, a stakeholder is any group or individual who can affect or is affected by an organization's or program's purpose. Examining the stakeholders of the Mentor-Protege Program will help identify several key benefits of the program which must be considered in any cost-benefit discussion. This is extremely important to Government policy makers. As Bryson, (1984) stated: "the key to success in public and nonprofit organizations is the satisfaction of key stakeholders"(p.52). Figure 2 depicts the model of a stakeholder map associated with this Mentor-Protege Program. This map was constructed with assistance from Oshkosh and Steeltech management. The model represents the many stakeholders in this relationship and is supported by the data presented below.

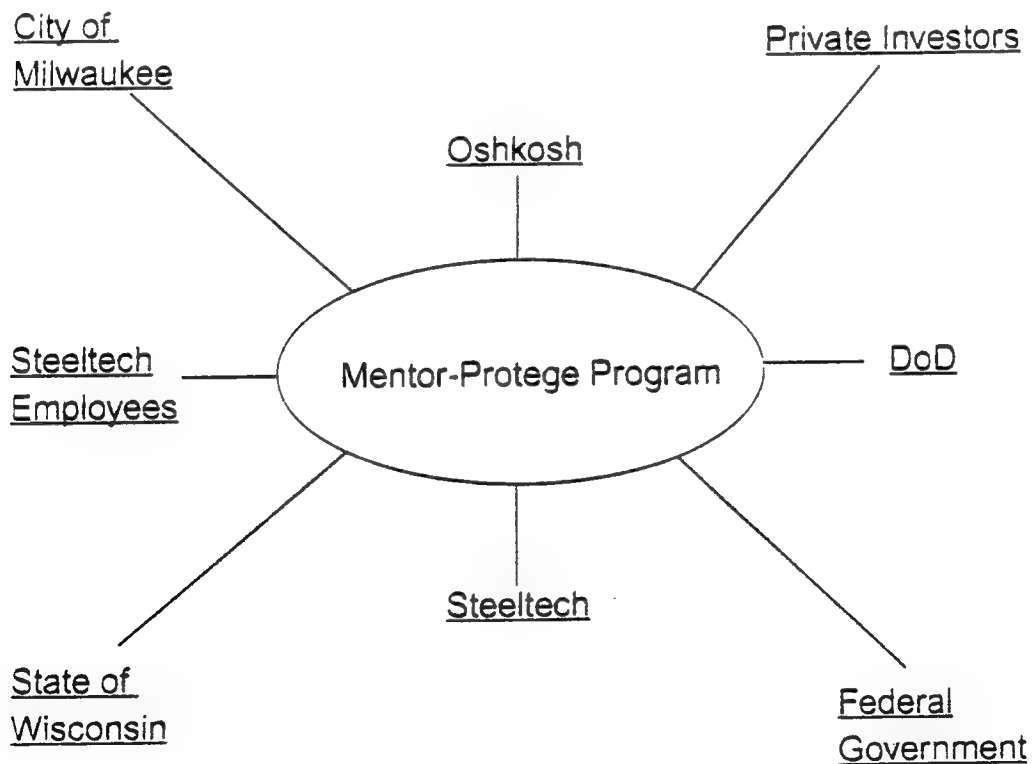


Figure 2. Stakeholder Map

The following section, will present the first three of the four stakeholder analysis steps that are outlined in Chapter III. This will identify several of the key stakeholders, determine their stake in the program and assess how the program is meeting their needs (Roberts & King, 1989). This process will create a broad and enlightened definition of benefits with respect to the Mentor-Protege Program.

1. Steeltech Employees

Who are the stakeholders in the Oshkosh and Steeltech mentor-protege relationship? When asked, the overriding response by all management personnel involved in the program was Steeltech's employees. Located in the heart of Milwaukee, 95% of Steeltech's employees are from this area. Steeltech employs over 150 workers whose pay ranges from about \$5.50 to \$15.00 per hour. Many of these employees have not worked in several years. About 81% of the employees are minority, including 50% of top management and 50% of the professional positions. Of these, 25% of the workers walk to work, a figure that would probably be higher but for a tendency of employees to move away from the area after they gain employment and increased financial stability.

Steeltech doesn't just hire its employees, it cultivates them through a comprehensive training program. This program teaches technical skills, such as welding, and personal skills including work ethics and responsibility. The technical training has been so successful that Steeltech has difficulty keeping enough trained welders on its employment roster. Some of these fortunate employees use their new start in life as a step to other opportunities, creating difficulties for Steeltech's management. Steeltech's work ethic training hasn't enjoyed the same success as their technical training. Curtis's (1993) report on Steeltech revealed that the small business experiences a high turnover rate in part due to worker absenteeism. In contrast, the Oshkosh production

manager who spent nearly a year at Steeltech exclaimed that the Steeltech employee's work ethic was superior to that found in many large manufacturing businesses. Steeltech management combats these problems with high standards, firm discipline and employee involvement.

Obviously, the mentor-protege arrangement has had and will continue to have a large impact on Steeltech's employees and their families. The opportunity, education, training and economic value that has been afforded the people of this community is almost immeasurable. How can anyone place a monetary value on quality of life? However, one thing is certain. Without Oshkosh Truck and the mentor-protege arrangement with Steeltech these benefits would have been unlikely in this location.

2. Steeltech Manufacturing

No doubt that Steeltech is a major stakeholder in the Mentor-Protege Program. While Steeltech's existence can be attributed to Fred Luber, Oshkosh, and many others, the program gave strength and structure to the existing mentor-protege philosophy which Oshkosh and Steeltech were nurturing. The relationship that has grown from this arrangement continues to provide Steeltech with opportunities and challenges as they work with their mentor, Oshkosh, on programs and projects for the future.

Along with this relationship comes the experience and financial stability of a quality prime contractor. Steeltech receives many benefits from the program including but not limited to receiving subcontracts on a non-competitive basis, frequent assistance in both technical and administrative areas, financial assistance, software provided to assist in preparing proposals and negotiations, assistance in obtaining financial backers and attracting quality management employees, manufacturing support, quality and networking. This finding supports the range of benefits cited by Rodriguez

(1993). Steeltech has quality personnel in all functional departments. But like many small businesses, their staff is only one person deep. A mentor with highly staffed experienced employees can assist the SDB by providing the wealth of knowledge that exists only in large experienced corporations. With Government prime contractors, this includes both technical and administrative expertise.

Manufacturing support illustrates the resources Oshkosh is willing to provide to Steeltech. During Steeltech's beginning, the company needed a manufacturing/production manager. Oshkosh's top management decided to assist their protege in this area. They provided Steeltech a production manager for a period of almost one year until a qualified replacement was hired. Oshkosh paid both the salary and travel expense for the manager while he worked for the protege firm.

3. Oshkosh

Oshkosh's initial involvement in creating and mentoring Steeltech resulted from a requirement in the PLS contract. However, from the beginning, Oshkosh intended to develop a subcontractor within the State of Wisconsin, preferably within the Greater-Milwaukee area. Their stake in the program is large. They have heavily invested both time and money to ensure Steeltech's success and survival. In return, they also receive some benefits from the program. Oshkosh now has a qualified subcontractor to produce the Flatrack for the PLS. Additionally, they can ensure that Steeltech has the ability and resources required to produce a quality product in an efficient manner. Oshkosh can recover all of their allowable expenses by allocating them to overhead accounts or directly charging them to Government contracts. They can award contracts for the flatrack to Steeltech on a noncompetitive basis. Oshkosh now meets and exceeds their mandated SDB and small business subcontracting goals (without the use of the

multipliers listed in Chapter II). They receive a quality product. Finally, Oshkosh has the opportunity to assist a SDB and the local community with the approval of DoD and the Government.

However, these benefits do not come without costs. As stated before, Oshkosh has invested heavily in Steeltech's success. The Corporation is one of the eighteen companies whose financial investment helped create Steeltech. Oshkosh has provided financial assistance by purchasing materials and making advance payments. The cost of the material can be allocated to the price of the contract; the interest expense cannot. Interest expense is listed in the Federal Acquisition Regulation as an unallowable expense. This expense has cost Oshkosh over \$900,000 since entering the program, 75% of the total dollars spent on the Mentor-Protege Program. This unallowable expense must be absorbed by company overhead allocated to other non-Government contracts. These additional expenses increase costs and may create a marked disadvantage for Oshkosh when competing for commercial contracts. When asked what could be improved with the program, Oshkosh management recommended reimbursement for interest expense incurred by the mentor to support a protege in a mentor-protege arrangement.

4. City of Milwaukee

The City of Milwaukee had two objectives for Steeltech: to create opportunities for minority inner city residents and to stimulate further investment in the area (Curtis, 1993). As discussed previously in this chapter, the first of these objectives has been accomplished in a commendable fashion. Employees from the local area have received a tremendous opportunity for employment and training. The second objective is much more difficult to accomplish, but progress is being made. As part of the site agreement, the city agreed to widen and improve adjacent streets to facilitate industrial

development. Across the street from Steeltech, a Walgreens drugstore has opened. In addition, the city plans to construct five or six buildings containing 250,000 to 300,000 sq.ft. of industrial space in the local area. The city also financed part of Steeltech's development through tax-exempt bonds. As Steeltech repays these bonds, the money may become available to finance other small business loans in the same area. (Curtis, 1993)

This mentor-protege relationship has helped revitalize a decaying community. The Steeltech facility represents the first new construction of a major industrial development in the area in over 20 years. The once deteriorating community has begun to revive its economic activity and former unemployed citizens are now contributing to the system that once supported many of them.

5. State of Wisconsin

The State of Wisconsin also participated in developing Steeltech. The state provided Steeltech a \$1.5 million loan for a rent deposit on the E-Coat paint line (Curtis, 1993). It is reasonable to assume that the state has a vital interest in resurrecting once thriving industrial areas and creating employment and training opportunities for minorities in these impoverished areas. The economic effects on both the state's revenues and welfare costs are a two-fold incentive for promoting such programs.

State involvement in the Mentor-Protege Program has not been explored at this time. However, the possibilities appear unlimited. This case is an example of the shared benefits that can result when stakeholders work together.

6. Private Investors

Examining Steeltech's financing packaging reveals a consortium of private investors including six banks, 18 companies and seven minority investors who contributed over \$12 million to the Steeltech project (Curtis, 1993). The

stakes of these private investors in the project are two-fold. First, economic -- each expects to earn a return on their investment. Second, social commitment -- each values participating in a community project aimed at providing some social good. While the list of financial backers is impressive, it is not without reservation. Many financial institutions were not willing to lend to a highly leveraged project such as Steeltech, no matter what the reason. Others insisted that most of their risk be mitigated before underwriting. These organizations require the mentor to borrow in the name of the protege or take title to work-in-process inventory and receivables as collateral for borrowing.

Private investors, banks, and financial institutions are key to Steeltech's survival. Like any business, Steeltech requires cash advances, lines of credit, and long term financing to carry out its day to day operations. This financial community has a stake in the Mentor-Protege Program. As SDBs grow and expand, they require support from such institutions. In turn, the institutions benefit from their involvement with the business community and the increased economic strength of both the citizens and local business.

7. DoD and the Federal Government

The final key stakeholder in the program is DoD and the Federal Government. The Mentor-Protege Program is a Federal program which has been implemented for a pilot period in DoD. Thus, the Government and DoD have substantial stakes in the program. The U.S. invested millions of dollars in the Mentor-Protege Program. Therefor, the Government has both a social and economic interest in its success. Because the mentor-protege relationship between Oshkosh and Steeltech was approved for credit only, DoD has invested very little in the arrangement. Only about 25% of Oshkosh's mentor expenses are recouped directly through allocation to Government contracts on which Steeltech performs. As of FY-93 these expenses

amounted to a little over \$200,000. This is small price to pay for the tremendous impact Oshkosh and Steeltech have on the local previously disadvantaged citizens and their community.

Another Federal agency, Housing and Urban Development (HUD), has a stake in the program. HUD provided a \$1.4 million grant that was crucial in financing the Steeltech project. In addition to these financial stakes, the program affects both welfare and revenue systems. These effects were discussed earlier for the city and state, but they are also applicable to the Federal Government. The social benefits that this program provides to the employees of Steeltech and the U.S. Government are, perhaps, more important than any financial stake. The Congressional intent of the program was to increase the participation of socially and economically disadvantaged persons in the U.S. Economy. The case at hand provides some insight to the tremendous effect that the program can have on the lives of many minority individuals and the SDB concern as a whole. Quality of life is very hard to measure, but it is easy to see that each individual connected with this program has experienced a tremendous improvement in their economic self-sufficiency. While this case represents only about 150 individuals, the possibilities if implemented throughout all Government agencies are very significant. It is noteworthy that the work opportunities provided by Steeltech also reduce the dependence on Government safety net programs such as unemployment and welfare. Furthermore, the Government now has a SDB which is performing on millions of dollars of Government subcontracts and commercial contracts. Plainly, the intent of the program is being accomplished.

D. THE RELATIONSHIP (TRANSORGANIZATIONAL SYSTEMS)

Cummings (1984) identifies a Transorganizational System (TS) as organizations which have joined together for a common purpose. The mentor-protege relationship is a Transorganizational System. Therefore, the four interaction processes which Cummings asserts have significant impact on the inter-organizational relationships between TS member organizations prove useful in examining this mentor-protege relationship. These processes are outlined in Chapter III of this thesis. While all of these interaction processes impact the mentor-protege relationship, some appear more critical than others. These critical elements will be discussed along with case results which support and extend the theoretical model.

1. Members' Efforts to Interact with Each Other

Resource dependency is key to the level of interaction between the mentor and protege. If the two organizations are dependent on one another, they are more likely to have a successful relationship. Dependency for the mentor takes the form of required assemblies or subassemblies. In this case, Oshkosh was required, by contract proposal and acceptance, to have a SDB as the subcontractor for the Flatrack. Additionally, as a Government prime contractor they have a 5% SDB subcontracting goal. Oshkosh now has a SDB subcontractor who is a quality producer. This resource dependency motivates Oshkosh to interact with Steeltech.

For Steeltech, there are many resource dependencies but a major one is the access to Government contracts. Steeltech may be awarded contracts by their mentor on a non-competitive basis. The size and dollar value of the subcontracts alone are enough to motivate Steeltech. Additionally, Steeltech has access to Oshkosh's corporate knowledge in dealing with Government contracts. The mutual benefit creates a

symmetrical exchange where both parties are motivated to interact.

The commitment to problem solving is a second indicator of the intensity of interaction. If TS member organizations are committed to solving problems, the level of effort displayed by the member organizations will be influenced. In this relationship, there was a commitment by multiple stakeholders (e.g., local business, City, State, and Federal Government) to ensure Steeltech's success. This evidence of broad stakeholder involvement may indicate the participation of other organizations in the Mentor-Protege relationship as a transorganizational system. The participation and commitment of these multiple stakeholders may predict the success of the mentor-protege relationship. Therefore stakeholder involvement could be a surrogate measure of the program. The commitment shown by Oshkosh is overwhelming. The manager of Oshkosh's Defense Engineering department said emphatically, "problem solving is what the mentor does." The Defense Engineering department interacts with Steeltech on a daily basis. Oshkosh management dedicates a significant amount of time to its mentor role. In the controller department, about 20% of the work effort deals with the mentor-protege relationship while members of the company's management team visit Steeltech on a weekly basis.

Although, the Mentor-Protege program is voluntary, mandate can still play an important role in developing the relationship. As pointed out earlier, the PLS contract required Oshkosh to have a SDB supply the Flatrack for the PLS by the third program year. This mandate was instrumental in the relationship that followed with Steeltech. Had this requirement not existed, Steeltech would probably not exist. Firms that are mandated to contract with SDBs have a vested interest in developing their mentor-protege relationship.

Cummings (1984) suggests that mandate can motivate organizations to interact, but the quality of interaction depends on other factors. While mandate spurred Steeltech's creation, Oshkosh's voluntary compliance with that mandate played the key role in establishing Steeltech. Oshkosh was not required to utilize a SDB until the third program year. However, from the start management intended to use a SDB to supply the Flatrack. Furthermore, the mandate did not require using the Mentor-Protege Program. Oshkosh's entry into a mentor-protege relationship was voluntary. This voluntary commitment to social purpose, moving beyond the mandated relationship, may indicate a successful mentor.

2. Coordination of Efforts

Coordination of efforts between the mentor and the protege is the second process affecting their TS relationship. Leadership is essential in any organization, but it is even more important in a TS. The mentor must provide the leadership in the relationship with its protege. The mentor promotes coordination and areas of common interest, provides standards of behavior, and provides access to key contacts, investors, financial institutions, etc.

In the case M-P relationship, Oshkosh performs the leadership role as both a mentor and prime contractor. Through their close working relationship with Steeltech, Oshkosh has instilled high standards of quality, performance and ethics in the relationship. Oshkosh has solicited Steeltech's participation on other Government contracts in which the two firms share a common financial interest. Oshkosh teamed with Steeltech to bid on the Army's High Mobility Trailer, though their bid was unsuccessful. Finally, supporting Cumming's (1984) model, Oshkosh works as a key contact on behalf of Steeltech with financial institutions, other firms, and the Government. This assistance has helped Steeltech win contracts, and receive progress payments and

other needed financial backing. Clearly, a mentor firm must possess the leadership qualities necessary to perform these functions and be willing to commit them in performing their mentor role.

Structure is essential in laying the foundation and coordinating efforts in the transorganizational relationship. In the Mentor-Protege Program, the mentor-protege agreement provides this structure. Oshkosh and Steeltech have a formal agreement, as outlined by the legislation and Appendix I of the DFARS. Following Cumming's (1984) model, the interaction in their relationship is frequent and person-to-person. Therefore, it is characteristic of a high intensity relationship.

Both organizations have a considerable investment at stake in the arrangement. Consequently, the relationship is based on a formal agreement. This agreement specifies the types of assistance to be provided, the terms of the relationship, and any other terms and conditions as agreed upon by both parties. Of particular importance in the mentor-protege agreement was establishing the assistance to be provided. Oshkosh management wanted to ensure that they did not commit to something that they could not provide. Another important part of the agreement was that either the mentor or protege could end the relationship when desired.

Last, Steeltech wanted to ensure that there was no implication of affiliation or control in the agreement. Steeltech wanted to protect their small business classification. This agreement is essential to ensure that there is a mutual understanding of the scope and responsibilities in the relationship. This is especially important if, as with this relationship, there is a substantial exchange of resources. This formal agreement has fostered mutual understanding and trust, resulting in very informal communication processes between the two firms.

Steeltech management stated that they do not need to refer to the original agreement because the relationship with Oshkosh is based on trust.

Cummings (1984) suggests that coordination can be facilitated by compatibility of member organizations. Compatibility may not be required for organizations in mandated relationships. However, in this case the two organizations have informal and frequent communications process which indicate a relationship going beyond the mandated requirements. Oshkosh and Steeltech share the same business values, needs and goals. Steeltech has emulated the quality standards and sound business practices that Oshkosh exemplifies. Outstanding contract performance is vital for both organizations' competitive future. Therefore, both organizations strive to produce a quality product, on time at the lowest possible cost.

Cummings (1984) states that in voluntary arrangements person-to-person communication has the most significant impact on coordination. As discussed above, communication between Oshkosh and Steeltech is almost exclusively person-to-person. This indicates a voluntary informal arrangement. Requests for assistance are handled by a simple phone call between the two management coordinators for the program. Much of the assistance in functional areas, such as engineering or finance, is conducted informally by managers in the functional departments. This type of assistance is routine and occurs often on a daily basis. This is contrary to Cumming's model which suggests that the more formal the TS, the more formal the communication process. Although the mentor-protege agreement between Oshkosh and Steeltech is a formal arrangement, the relationship between Oshkosh and Steeltech is based on informal communication. This case suggests that effectiveness in mandated relationships may be indicated by the extent to which the relationship moves away from strict

reliance on contract toward more informal collaboration.

Cummings (1984) states that positive assessments are strong predictors of coordination. Oshkosh and Steeltech have not conducted any formal assessment of their interaction under their mentor-protege agreement. However, it is reasonable to assume that the managers of the two organizations are prudent business persons and, therefore, routinely assess their business relationships. When asked about their relationship, both organizations' management had favorable comments. Oshkosh management added that the program required a substantial commitment by the mentor and questioned whether any mentor could commit to more than one protege. Steeltech management had only the highest praise for their mentor.

When asked to assess the Mentor-Protege Program, Oshkosh management suggested only three things. First, that the unallowability of associated interest expense is a burden on the Mentor. Second, DoD needs to publish more explicit direction for collecting credit and reimbursement. Third, that audit requirements are burdensome, as with any Government program.

3. Performance Strategies

The third interaction process which affects the mentor-protege relationship is shared performance strategies. These strategies include choices that organizations make about desirable outcomes and how to achieve them. While desired outcomes are important to the success of a mentor-protege relationship, the methods of achieving those outcomes may or may not be congruent.

These strategies may be conveyed to the protege by the mentor firm through direction setting. Oshkosh sets direction by establishing clearly defined performance outcomes in several ways. Some direction is mandated in contractual requirements. Quality standards are set through published and practiced requirements. Additionally, Oshkosh has exercised

a supplier agreement with Steeltech which identifies performance outcomes which Oshkosh values.

Given the clarity of direction/goals set by Oshkosh, Steeltech is able to choose the appropriate mechanisms for achieving them. Establishing clearly defined performance outcomes allows Steeltech management to form its own performance strategies. Although Oshkosh may suggest how Steeltech might accomplish a certain task, Steeltech may or may not accept the recommendation. Instead, Steeltech may independently evaluate processes to achieve those common outcome objectives.

A recent example is the production schedule for the Enhanced Flatrack. Oshkosh and Steeltech share the performance outcome of delivering a quality product on time. In order to achieve this goal, Steeltech found it necessary to modify the delivery schedule that was suggested by Oshkosh. The organization's agreement on desirable outcomes allows flexibility to determine how to achieve them.

Because Steeltech was a new company, it was not necessary to break collective definitions to achieve shared performance norms. Steeltech employees were willing to adopt many of the performance outcomes and expectations that Oshkosh presented. This is evident in the many similar business practices and standards that the protege has taken from the mentor and "modified" to meet small business needs. It seems likely that more often than not the SDB will copy any appropriate performance strategies, given the different environment in which the SDB operates. These shared practices and standards have created a common language which facilitates and strengthens the relationship.

Changing networks is another method of developing shared performance norms. Since Steeltech did not have a network of organizations with which it interacted, it was free to develop shared norms with Oshkosh. To assist in developing Steeltech,

Oshkosh's top management sent a letter to suppliers and business associates introducing Steeltech and recommending them as a quality business. By encouraging Steeltech to interact with other organizations which share similar performance goals, Oshkosh management strengthened the development of shared performance norms with their protege.

4. Utilization of Knowledge, Skills and Resources.

A TS in which member organizations have high levels of knowledge, skills and resources is more likely to have high performances than one that does not. Therefore, Mentor firms should bring to the relationship adequate task relevant knowledge, skills, experience, and other resources. The nature of most SDBs limits their contribution and makes it necessary for the mentor to provide these critical elements. In this case, Oshkosh has committed both personnel and other substantial resources to the mentor-protege relationship with Steeltech. The entire management staff is involved in some manner with the mentor-protege relationship. The staff is committed to providing whatever assistance is specified within the agreement and much assistance which is not formally specified.

When resources are not available within the TS, the mentor must have the ability to help recruit needed resources. Stakeholder Analysis is one method of identifying and recruiting organizations and groups that are affected by the problem and have a stake in its solution. Oshkosh assisted in this manner while developing Steeltech, helping to secure required City, State and Federal Government involvement. For a mentor-protege relationship to be successful, the mentor must commit a formidable amount of resources to the relationship.

5. Environment, Task/Problem and Feedback

In Cumming's (1984) model, the TS environment impacts inputs, interaction processes, and task/problem characteristics. The Mentor-Protege Program environment supports this finding. The external environment impacts the organization's motivation to interact. Today's defense marketplace is characterized by decreasing defense contracts and increasing Government socio-economic goals. This environment motivates firms to engage in the Mentor-Protege Program. Establishing long term business relationships with SDBs will provide a competitive advantage when bidding on future Government program contracts. Already, many Government contracts, such as the PLS, consider SDB involvement in the evaluation criteria. As the number of Government contracts decrease, each contract becomes more valuable and the motivation for firms to interact increases. Oshkosh's and Steeltech's perception of their shared goals and preferred resource allocation will affect the other inputs they use in the interaction processes. These positive perceptions have resulted in a positive informal relationship based trust and cooperation.

There are a variety of tasks and problems facing these organizations. They range from relatively structured, such as Government contract requirements, to non-structured, such as the many financing problems which face an emerging small business. Structured problems are more likely to depend on coordination for successful performance. Conversely, non-structured problems are more likely to depend on innovative strategies or high levels of skill or knowledge for resolution. Because many of the task/problems in the mentor-protege relationship are interdependent, successful performance requires coordinating efforts.

In the TS, feedback affects subsequent inputs, interaction processes and environments. To date, much of the

feedback associated with the case mentor-protége relationship has been positive. During reviews conducted by both the Small Business Administration and the Defense Contract Management Command, Oshkosh's small business and SDB subcontracting programs were rated as excellent and outstanding, respectively. Oshkosh was presented an award of outstanding performance on Small and Disadvantaged Business Programs for 1993 by the Defense Contract Management Command. Additionally, Steeltech's amazing story was publicized in an article by the Urban Land Institute. This feedback will not only affect this mentor-protége relationship but may affect many others through the shared TS environment. This positive feedback has not been without some criticism. However, both organizations are continuing to improve their relationship and plan to renew their agreement for another term.

E. SUMMARY

This chapter has examined the case relationship using three methods. The case was evaluated using the measures which are outlined in Appendix I of the DFARS. This section identified several weaknesses of the current measures in predicting the program's success. The overriding weakness seems to be a problem with identifying a direct relationship between the measure and the results. Most of the current measures may be influenced by other forces and may not accurately predict the effects of the program.

The case was then examined using Stakeholder Theory to identify the many stakeholders and their interests in the program. This section provides some insight to the affect the Mentor-Protége Program has on many organizations, groups, and individuals. This information may be useful in determining additional program measures that can be used to evaluate program success.

Finally the case relationship was examined using current management theory on Transorganizational Systems to identify the fundamental aspects of the program as they relate to the interorganizational system. These essential elements could be critical to success of the mentor-protege relationship. This information may be used by mentor firms to evaluate their mentor-protege relationships.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

The objective of this research was to identify the benefits of the Mentor-Protege Program and to elaborate current measures of the program to address an expanded definition of benefits. Program evaluation criteria may include both outcome and process measures. Process measures may help mentors evaluate their relationship and may indicate the likelihood of success.

To meet these objectives, an analysis framework was designed using current DFARS criteria, Stakeholder Analysis and Transorganizational Systems Theory. This framework helped evaluate current measures of success, identify other program benefits, and characterize interaction processes that may indicate a successful mentor-protege relationship.

This chapter presents the conclusions and recommendations of this thesis. It will be presented in three parts. First, an evaluation of the relationship between Oshkosh and Steeltech using the current evaluation criteria, including a critique of the DFARS criteria and recommendations for improvement. Second, expanded benefits of this case identified by Stakeholder Analysis are presented along with recommendations for program application. Third, the interorganizational processes evident in this case are summarized, including their influence on the success of the relationship and recommendations for applying process evaluation in the Mentor-Protege Program.

B. THE CASE AS ANALYZED USING EXISTING DFARS MEASURES

The mentor-protege agreement between Oshkosh Truck Corporation and Steeltech Manufacturing Incorporated is very successful. Current DoD measures as outlined in Appendix I of the DFARS indicate that the relationship is fulfilling the program's intent. The arrangement has increased Steeltech's

abilities to perform as a contractor and subcontractor in both the Government and commercial marketplace. It has also increased the number and dollar value of contracts awarded to the protege by both their mentor firm and other customers. As a result of the relationship, Steeltech has the facilities and equipment to compete in the electro-deposition coating market, an industry in which SDBs do not normally participate. Additionally, Steeltech is competing successfully in other industry areas for both Government and commercial contracts. The Mentor-Protege Program has had a very positive effect on Steeltech's ability to compete and perform, thereby increasing its participation in the nation's economy.

1. Critique of Existing Measures

Many of the DoD measures outlined in Appendix I of the DFARS are not precise enough to measure only program related results. The measures below are too broad and cannot identify which outcomes can be attributed to the Mentor-Protege Program:

1. An increase in the dollar value of subcontracts awarded to SDBs by mentor firms under DoD contracts.
2. An increase in the dollar value of contracts and subcontract awards to protege firms (under DoD contracts, contracts awarded by other Federal agencies and under commercial contracts) since the date of entry into the program.
3. An increase in the number and dollar value of subcontracts awarded to a protege firm (or former protege firm) by its mentor firm (or former mentor firm).
5. An increase in subcontracting with SDB concerns in industry categories where SDBs have not traditionally participated within the mentor firm's vendor base.

While the results of these measures can demonstrate an increase in the participation of SDBs, the increase could be

the result of other causal factors such as changes in market forces or business mix. In order to determine effects of the program, these measures should concentrate on program related increases only. Therefore, DoD should be aware of the multiple factors which can affect results and attempt, as much as possible, to use measures that minimize the impact of non-program factors.

At least two of the measures should require self-evaluation by the protege firm. These measures are:

4. An improvement in the participation of SDBs in DoD, other Federal agencies, and commercial contracting opportunities that can be attributed to the development of SDBs as protege firms under the program.
8. The development of protege firms that are competitive as subcontractors and suppliers to DoD or in other Federal agencies or commercial markets.

These are qualitative measures that can only be properly evaluated by the protege firm. Program reporting requirements currently require Mentors to report on progress related to the measures listed in Appendix I of the DFARS. Evaluation of these measures by the mentor would be biased at best and, at worst, a guess. At a minimum, these measures should be reported by the mentor with input by the protege. Reporting by both the mentor and the protege would provide a more balanced and complete evaluation of the program and its effect on the SDB community.

2. Recommendations

Current measures for the Mentor-Protege Program outlined in Appendix I of the DFARS should be modified to preclude the measurement of non-program related results. It is imperative that program measures have the ability to accurately measure the program's success or failure. Self-evaluation and reporting increases the need for accurate well-defined

measures. Therefore, measures must reflect increases in SDB capability or involvement that are attributed to the program alone. For example, measure one reads "An increase in the dollar value of subcontracts awarded to SDBs by mentor firms under DoD contracts." This could be modified to read "An increase in the dollar value of subcontracts awarded to protege SDBs by mentor firms under DoD contracts which is attributed to increased capability or involvement under the M-P Program." Minor modifications of the current measures will enable DoD's OSADBU to more accurately measure the impact of the program on the SDB community. Accurate information to support the program will be vital as defense dollars and programs shrink.

DoD should include self-evaluation of both the mentor and the protege in assessing the program's impact. Some measures have qualitative characteristics which require a determination by the protege firm. All eight of the current measures could be evaluated by protege firms as well as the mentors. This two-sided evaluation should be solicited from each mentor and protege directly by DoD. Reporting by both the mentor and the protege will provide a more balanced and complete evaluation of the program. Additionally, this type of qualitative focus will become increasingly important as the dollar value of available subcontracts decreases.

C. THE CASE AS ANALYZED USING STAKEHOLDER ANALYSIS

There are other benefits of the Mentor-Protége Program which should be discussed in evaluating program results. Stakeholder analysis may be used to determine who are the stakeholders and what stake they have in the program. Applying stakeholder analysis to this case revealed numerous stakeholders with substantial stakes in the program. Many of these stakeholders are receiving benefits from the program that are not reflected in the current program measures. The

most significant of these stakeholders are the formerly unemployed and unskilled minority employees that have now been trained and employed by the protege firm. The case relationship has also had a substantial impact on the local community sparking a revitalization of the surrounding area. These additional effects, not captured by the traditional definition of benefits, should be included when measuring program results.

The Mentor-Protege Program may affect who receives a particular subcontract. As such, it affects specific workers and communities. Without the M-P program, the subcontracts would still be completed somewhere, so jobs would be created. However, the program may direct these jobs to disadvantaged minority individuals and their community.

Because of the effects on both the minority citizens and the community, additional measures may be needed to determine the socio-economic effects of mentor-protege relationships. Contracts awarded by the mentor to the protege resulted in the construction of a state-of-the-art facility in an impoverished area and jobs for over 150 minority individuals. Many of these individuals were unemployed for extended periods of time. The majority of the workers were from the local area and about 25% of them walk to work. The rebirth of industry in the downtown region has attracted other new business to the area creating additional employment opportunities and improving the quality of the community. These benefits resulted from the mentor-protege relationship and should be considered during any evaluation.

1. A Hypothesis on Stakeholder Involvement

The success of mentor-protege relationships may be influenced by the degree to which they are supported by stakeholders other than the mentor, the protege, and DoD. In the case relationship, Steeltech's success depended on many individuals, groups, and organizations both Government and

private. Financial institutions and City and State Government provided support critical to the success of the protege and the mentor-protege relationship. Without the participation and support of these stakeholders, the ability of the SDB would have been limited and probably inadequate.

2. Recommendations

Stakeholder analysis should be included in measuring program results. This analysis will broaden the definition of program benefits. The legislative intent of this program is to increase the ability and opportunities of minority individuals to compete in the marketplace. It is reasonable to include some measure of the opportunities afforded to minority individuals through the program. Simple measures which reflect the increase in minority employment or other opportunities should be considered in evaluating the program's success.

DoD should solicit and encourage the support and involvement of other Federal Agencies, State and Local Government, financial institutions and private business in the Mentor-Protege Program. These individuals, groups, and organizations can provide access to additional resources that support the protege, the mentor, and the Government. Their involvement can help to ensure mentor-protege relationship and the program are successful.

DoD should consider the economic impact of each mentor-protege relationship on the minority citizens and the local community. Benefits such as additional job opportunities, impact on both the welfare and tax departments, and increased economic viability of depressed areas should be considered in evaluating the program's impact on the minority community.

D. THE CASE AS ANALYZED USING TRANSORGANIZATIONAL SYSTEMS

There are several interaction processes in mentor-protege relationship which are essential to success. Application of Cumming's (1984) integrative framework of Transorganizational Systems to the case material revealed several key processes associated with a successful interorganizational relationship.

Resource dependency and commitment to problem solving indicate the effort that organizations expend interacting with each other. Mandate can invoke participation. However, the mentor's voluntary commitment to a social purpose will foster the effort and the quality of that effort.

Coordinating efforts depends on the leadership that the mentor provides the protege. The mentor-protege agreement provides structure to the arrangement. However, the results of this case suggest more informal relationships, based on frequent informal communication, have a positive impact on coordinating efforts. The compatibility of the mentor's and the protege's values, needs and goals will also improve the coordination between the organizations. Shared performance goals and outcomes indicate a successful relationship. The mentor can strengthen performance norms by encouraging the protege to interact within a network of companies who share performance norms.

The level of knowledge, skill, and resources that the mentor brings to the relationship affects success. Proteges are limited in the resources that they can offer the relationship. When resources are not available in the TS, Stakeholder Analysis is an effective means of identifying and recruiting additional resources. The defense marketplace is characterized by decreasing contracts and increasing socio-economic goals. These trends along with the advantages of the mentor-protege program create an environment which is favorable for the mentor-protege relationship as a Transorganizational System.

The application of TS measures to the mentor-protégé relationship may provide contractors and DoD with valuable indicators of the future success of mentor-protégé relationships. Current DFARS measures and Stakeholder Analysis both focus on measuring outcomes. Conversely, TS theory applied to the mentor-protégé relationship can measure processes and their inputs. These measures of successful interaction processes can provide mentors with predictive indicators of a successful relationship. DFARS measures and stakeholder analysis may be used as measures of interaction after-the-fact. However, the indicators of a successful transorganizational system could be applied by prime contractors to measure their performance as mentors. This also integrates the aspect of assessments which is a contributing factor to successful TS relationships.

1. Recommendations

DoD should recommend that mentors and protégés use the Transorganizational Systems model to evaluate their interaction. This framework gives managers the ability to identify the strengths and potential weaknesses of the relationship. By focussing on the processes rather than the outcomes, the framework can also provide the mentor and the protégé a blueprint for building an effective relationship. These processes and their inputs may even act as secondary indicators of a successful relationship.

DoD should include process measures in the criteria for evaluating the Mentor-Protégé Program. The TS model provides several process indicators which could be used. Additionally, the DFARS guidelines, which outline the types of assistance that mentors may provide under the program, could be used to assess the quality of interaction in mentor-protégé relationships.

E. AREAS FOR FURTHER RESEARCH

The following areas are recommended for further research:

1. Analyzing how the size and intensity of the stakeholder "network" affect the success or failure of mentor-protege relationships.
2. Analyzing the economic effects of the Mentor-Protege Program on minority communities.
3. Analyzing the characteristic differences between successful and unsuccessful mentor-protege relationships.
4. Comprehensively evaluating the Mentor-Protege Program using current and proposed measures of successful performance.

APPENDIX. INTERVIEW QUESTIONS

1. MENTOR QUESTIONS.

A. Why did Oshkosh choose to participate in the Mentor-Protege Program? What were the goals of participation?

B. What company officials were involved in the decision making process and what was there rationale?

C. What alternatives were explored?

D. Were other protege's considered?

E. Why was Steeltech selected?

F. Did Oshkosh use Steeltech as a subcontractor prior to the Mentor-Protege agreement?

G. Prior to the arrangement with Steeltech, did Oshkosh have trouble finding qualified SDB subcontractors in this industry category to include in the firm's vendor base?

H. Why was the PLS program selected? Why was the Flatrack selected?

I. Is Oshkosh's participation in the program permanent or is this temporary arrangement?

J. Does Oshkosh have any pending mentor-protege agreements? If yes, with what company?

K. What business risk does Oshkosh attribute to the program? How are these risks managed/mitigated?

L. Does Oshkosh perceive any potential liabilities with the program? What legal considerations were evaluated?

M. From Oshkosh's perspective, who are the stakeholders in the program?

N. What benefits has Oshkosh received from the program?

O. What barriers/limitations have prevented/hindered Oshkosh's realization of benefits.

P. What changes would you make to the program?

Q. Did Oshkosh personnel contact the program office regarding reimbursement of assistance costs through a cost reimbursement contract line item?

R. Has Oshkosh responded to any DoD Mentor-Protege Program solicitations for participation in the program under a separate contract, cooperative agreement or other agreement in order to receive reimbursement or a combination of reimbursement and credit for providing developmental assistance to one or more proteges? If no, why not?

S. Have Oshkosh personnel requested that the PLS program manager request funds to be allocated to the PLS program for SDB development? If no, why not?

T. Does Oshkosh provide progress payments or advance payments to Steeltech? If yes, does Oshkosh receive reimbursement for these payments from the Government immediately?

U. How many SDBs does Oshkosh contract with?

V. Has Oshkosh increased the dollar value of subcontracts awarded to SDBs under DoD contracts since entering the Mentor-Protege program? If yes, what is the amount of increase?

W. Has Oshkosh increased the number and dollar value of subcontracts awarded to Steeltech Inc. since entering the program? If yes, by how many and what dollar amount?

X. Has the Mentor-Protege agreement extended the relationship between Oshkosh and Steeltech to include non-DoD programs, contracts and subcontracts? If yes, how many contract actions and what dollar amount?

Y. What type of developmental assistance has been provided to Steeltech by Oshkosh? What are the costs associated with the assistance that was provided?

Z. What amount of credit has Oshkosh claimed/received toward attainment of their SDB subcontracting goal as a result of the program.

A1. What percentage of Oshkosh's business is defense related?

2. PROTEGE QUESTIONS.

AA. Why did Steeltech enter the program?

BB. What personnel were involved in the decision making and what was their rationale for entering the program?

CC. What were the considerations made? What did Steeltech hope to get from the program?

DD. What potential liabilities did Steeltech consider?

EE. Did Steeltech consider this a long term or short term program?

FF. From Steeltech's perspective, who are the stakeholders in the program?

GG. Has Steeltech improved its participation in DoD, other Federal agencies and commercial contracting opportunities that can be attributed to its development under the program? If yes, explain.

HH. Was Steeltech an emerging SDB upon entering the program? (An emerging SDB is one whose size is no greater than 50 percent of the numerical size standard applicable to the standard industrial code (SIC) for the supplies or services which the protege firm provides or would provide to the mentor firm).

II. Has Steeltech increased its competitive ability as a subcontractor and supplier to DoD or in other Federal agencies or commercial markets? If yes, explain how and by what measure, e.g. increase in the number of awards and percent of successful contract proposals.

JJ. What assistance has steeltech received from Oshkosh? What value is placed on that assistance.

KK. What benefits has Steeltech received from the program?

LL. What barriers/limitations have prevented/hindered realization of benefits.

MM. What changes would you make to the program?

NN. What percent of Steeltech's business is Defense related?

OO. What percent of Steeltech's business is with Oshkosh?

PP. Has Steeltech increased their dollar value of contract and subcontract awards (under DoD contracts, other Federal Contracts and commercial contracts) since entering the program? If yes, which types of contract and what amounts?

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